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6 How to Handle Opposing Arguments in Persuasive Messages: A Meta-Analytic Review of the Effects of One-Sided and Two-Sided Messages

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A random-effects meta-analytic review of the effects of one-sided and two-sided persuasive messages identifies two key moderator variables: whether the two-sided message is refutational or nonrefutational and whether the message is consumer advertising or nonadvertising. Compared with one-sided messages, refutational two-sided messages on nonadvertising topics enjoy significantly greater credibility and persuasiveness, nonrefutational two-sided messages on nonadvertising topics are not significantly different in credibility and are significantly less persuasive, refutational two-sided messages on advertising topics do not differ significantly on either credibility or persuasiveness (though few relevant studies exist), and nonrefutational two-sided messages on advertising topics enjoy significantly greater credibility but do not differ in persuasiveness. Often-mentioned moderators (such as audience initial position and education) appear not to have substantial influence on sidedness effects. Explanations of the observed effects are explored, and foci for future research are identified.

HOW should a persuader handle opposing arguments? In many circumstances, a persuader will at least be aware of some potential arguments supporting the opposing point of view. What should a per-

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suader do about these, so far as the persuader's own message is concerned? One possibility, of course, is simply to ignore the opposing arguments, and so not mention or acknowledge them at all; the persuader would offer only constructive (supporting) arguments—that is, arguments supporting the persuader's position. The other possibility is for the persuader not to ignore the opposing arguments, but to deal with them (somehow) while also presenting his or her supporting arguments.

In the research literature on persuasion, this basic contrast—ignoring versus not ignoring opposing arguments—has commonly been captured in the distinction between a "one-sided" message (which ignores opposing arguments) and a "two-sided" message (which, while presenting supportive arguments, also acknowledges opposing arguments). Indeed, there is now a substantial literature on the persuasive effects of variations in message sidedness; this chapter provides a meta-analytic review of this research.

PREVIOUS RESEARCH ON MESSAGE SIDEDNESS

For quite some time, research evidence has been accumulating on the questions of what persuasive effects are associated with message sidedness variations and how the observed effects might best be explained. As will be seen, primary research provides more than 100 estimates of the size of the effect of sidedness variations on persuasive outcomes.

Despite this accumulated evidence, most secondary discussions of the sidedness literature still mention only a few selected investigations (e.g., Eagly & Chaiken, 1993, pp. 561, 623n2). Even papers aimed at providing integrative treatments of this literature do not consider more than a small proportion of the research evidence. For example, Jackson and Allen (1987) analyze 31 effect sizes, Pechmann (1990) cites 12 primary research studies, Allen's (1991, 1994) meta-analyses are based on 26 and 70 effect sizes, and Crowley and Hoyer's (1994) treatment relies on no more than 20 primary research studies.

Nevertheless, previous discussions of message sidedness effects contain two broad themes that can be useful in guiding a review. First, variations in credibility perceptions may be implicated in sidedness's effects on persuasive outcomes. It is commonly speculated, for example, that acknowledging opposing arguments may, by suggesting the communicator's honesty and lack of bias, boost the communicator's credibility and thereby the message's effectiveness (see, e.g., Hovland, Lumsdaine, & Sheffield, 1949, p. 204; Pechmann, 1990; Settle & Golden, 1974). Allen's (1994) review, having noted Allen et al.'s (1990) finding that sidedness's effects on credibility are consistent with the pattern of effects on persuasive outcomes, suggests the possibility that credibility perceptions might play a causal role in persuasive

effects. However, no extant meta-analytic review has systematically considered the effects of sidedness variations on credibility perceptions.[1] Hence the present review examines both persuasion-outcome effects (such as attitude change) and credibility-perception effects.

Second, it is widely anticipated that sidedness effects will be moderated by other factors. Indeed, from the very beginnings of sidedness research, a number of possible moderators have been proposed. Hovland et al. (1949, p. 225), for example, suggested that the audience's educational level is an important determinant of the consequences of sidedness variations. Other proposed moderators have included the audience's initial opinion (Hovland et al., 1949, p. 225), perceived source motivation (Pechmann, 1990), exposure to subsequent opposing communications (Lumsdaine & Janis, 1953), and topic familiarity (Allen, 1991, p. 401n2). Some of these moderators cannot usefully be examined through meta-analytic methods. For example, some factors (such as perceived source motivation) are typically not explicitly measured in primary research and cannot be very satisfactorily assessed post hoc (that is, in the absence of direct measures being made in the primary research).

Two particular moderators, however, recommend themselves to meta-analytic attention. The first is the nature of the two-sided message. Just what sorts of arguments are discussed, and just how they are discussed, may make for different persuasive effects (see Allen, 1991, 1994; Crowley & Hoyer, 1994; Jackson & Allen, 1987; Pechmann, 1990). Two varieties of two-sided messages have been recognized. A *refutational* two-sided message attempts to refute opposing arguments in some fashion; this might involve attacking the plausibility of opposing claims, criticizing the reasoning underlying opposing arguments, offering evidence that is shown to undermine opposing claims, and so forth. A *nonrefutational* two-sided message acknowledges the opposing considerations but does not attempt to refute them directly; it might suggest that the positive supporting arguments outweigh the opposing ones, but it does not directly refute the opposing arguments. Previous discussions have suggested that sidedness effects may vary significantly depending upon whether the opposing arguments are refuted (Allen, 1991, 1994; Crowley & Hoyer, 1994; Jackson & Allen, 1987). Specifically, Allen (1991, 1994) has concluded that there is a persuasive advantage for refutational two-sided messages (over one-sided messages) but no such advantage for nonrefutational two-sided messages; moreover, this effect is reported to be quite general and consistent (that is, unaffected by other moderator variables).

The second moderator of special interest is the topical area of the message, specifically whether the message represents advertising (that is, advertising for a consumer product or service) as opposed to some nonadvertising topic (social or political questions, for example).[2] There has been speculation that nonrefutational two-sided messages may have different effects in consumer advertising contexts than in nonadvertising contexts (O'Keefe, 1990, p. 174).

Although previous discussions of sidedness effects have sometimes been sensitive to the possibility of differences between these persuasion contexts (e.g., Crowley & Hoyer, 1994, p. 562), extant reviews have not systematically examined variations in sidedness effects across these topical areas.

Four other possible moderators were also included in this review, largely because of long-standing (and often-repeated) suggestions that they might influence sidedness effects. One is the audience's initial attitude. Hovland et al. (1949, pp. 212-213) found one-sided messages to be more persuasive than two-sided messages for receivers initially favorable to the advocated view, but found two-sided messages to be more effective with receivers initially opposed to the message's standpoint. Corresponding generalizations about the moderating role of initial audience attitude are common in secondary treatments of the sidedness literature (e.g., Bettinghaus & Cody, 1987, p. 149; Johnston, 1994, p. 142; Pratkanis & Aronson, 1992, p. 155; Reardon, 1991, p. 105; Shimp, 1990, p. 150), but previous meta-analytic reviews have failed to confirm this generalization (Allen, 1991, 1994; Jackson & Allen, 1987).

A second possible moderator is the audience's level of education. Hovland et al. (1949, pp. 213-214) conclude that one-sided messages are more effective than two-sided messages for receivers low in education, whereas two-sided messages have the persuasive advantage with more educated audiences. This, too, often appears in secondary treatments as a generalization about sidedness effects (e.g., Kotler, 1980, p. 482; Shimp, 1990, p. 151), though sometimes phrased in terms of intelligence rather than educational level (e.g., Johnston, 1994, p. 142; Reardon, 1991, p. 105); meta-analytic reviews by Jackson and Allen (1987) and Allen (1994), however, failed to confirm any such general moderating role for audience education.

The third possible moderator is the audience's likely availability of counterarguments. Several commentators have suggested that when receivers have counterarguments available to them, two-sided messages will be more effective than one-sided messages, but when receivers are unlikely to have counterarguments ready to hand, one-sided messages will be more persuasive (e.g., Chu, 1967; Hass & Linder, 1972; Pratkanis & Aronson, 1992, pp. 154-155). Indeed, the availability of counterarguments is sometimes proposed to underlie possible effects (on sidedness outcomes) of other moderator variables. The suggestion is that with receiver opposition to the advocated view, receiver familiarity with the topic, or higher receiver intelligence or education, receivers will likely have counterarguments easily available, thus making two-sided messages more advantageous in such circumstances (McGuire, 1985, p. 272).

The fourth possible moderator is the order of materials in the two-sided message. Jackson and Allen (1987) note that a two-sided message can organize its materials in three ways: by discussing supporting arguments first and then opposing arguments, by discussing opposing arguments first and then supportive arguments, or by interweaving discussion of supportive and op-

posing arguments. Their review suggests that, at least for refutational two-sided messages, the support-then-refute order might be most persuasive and the refute-then-support order least persuasive. McGuire (1985, p. 272) claims that refutational material can successfully precede supportive materials in two-sided messages, but Crowley and Hoyer's (1994, p. 568) review suggests that two-sided messages should not begin with discussion of opposing considerations.

METHODS

Identification of Relevant Investigations

Literature search. Relevant research reports were located through personal knowledge of the literature, examination of previous reviews and textbooks, and inspection of reference lists in previously located reports. Additionally, searches were made through databases and document-retrieval services using "one-sided," "two-sided," "sidedness," and "refutational" as search bases; these searches covered material at least through August 1997 in PsycINFO, ERIC (Educational Resources Information Center), Current Contents, ABI/Inform, CARL/UnCover (Colorado Association of Research Libraries), Medline, and Dissertation Abstracts Online.

Inclusion criteria. To be included, an investigation had to meet two criteria. First, the study had to compare a one-sided message with a two-sided message without intentionally confounding the sidedness manipulation with other distinct manipulations or with the advocated position. A one-sided message contains only supporting arguments or considerations (that is, arguments or considerations supporting the advocated position). A two-sided message both (a) offers supporting arguments or considerations and (b) at least acknowledges possible opposing arguments or considerations. Generally speaking, an opposing argument or consideration is some argument or consideration that could be raised to support an opposing view (that is, a view opposing that of the advocate) or some argument or consideration that could be raised to undermine the advocated view; thus acknowledging possible opposing arguments or considerations at least means explicitly recognizing the existence of some possible countervailing considerations, some considerations that could (at face value) incline a person against the advocate's viewpoint.

Excluded by this criterion were studies that lacked two-sided messages (e.g., Cronen, 1976; Gaudino & Harris, 1988; Havitz & Crompton, 1990; Kohn & Snook, 1976; McGuire & Papageorgis, 1961; Sheagren, 1997; Thistlethwaite, Kamenetzky, & Schmidt, 1956; Welford, 1972; Weston, 1968) or one-sided messages (e.g., Birkimer et al., 1994; Deuser, 1989; Janis & Feierabend, 1957; Thistlethwaite & Kamenetzky, 1955; Winkel & Huismans, 1986) and designs in which the discussion of opposing arguments and the

presentation of supporting arguments appeared in different messages (Kennedy, 1982). Also excluded were quasi-experiments in which sidedness variations were purposefully confounded with other experimental manipulations (e.g., Kasulis & Zaltman, 1977; Koyama, 1982; Reynolds, West, & Aiken, 1990), designs in which receivers were exposed to both one- and two-sided messages in a way that made it impossible to compare the effects of the two message forms (Kosc & Winkel, 1982), and review papers or secondary discussions (e.g., Allen, 1993; Lawson, 1970; O'Keefe, 1993; Ragon, 1996).

As a result of the application of this first criterion, the literature reviewed did not precisely match the literature that might conventionally be labeled as studies of message sidedness. There were two reasons for this. First, some studies—despite not usually being represented as studies of message sidedness effects and despite not themselves mentioning the sidedness literature—involve the same sort of manipulation (of how opposing material is handled) that is common in the message sidedness literature (e.g., Schanck & Goodman, 1939). Second, some studies that have been labeled as studies of message sidedness do not employ manipulations of the sort reviewed here; for example, Wolfinger (1955) and Allen et al. (1990, Replication 1, pro-choice [1] messages) varied the elaborateness of the opposing argument or its refutation, but not the presence of opposing arguments (and hence had no one-sided message).

The second inclusion criterion was that the investigation had to contain appropriate quantitative data pertinent to the comparison of persuasive effectiveness or perceived credibility across experimental conditions. Excluded by this criterion were studies of effects on other dependent variables (e.g., Assael & Kamins, 1989; Brenner, Koehler, & Tversky, 1996; Misra & Jain, 1971), including resistance to persuasion (e.g., Insko, 1962; Manis & Blake, 1963; O'Connor & Vann, 1979), and studies not reporting appropriate quantitative information (e.g., Anderson & Golden, 1984; Belch, 1983; Faison, 1961; Gore, 1976; McGinnies, 1966; Sawyer, 1973; Skilbeck, Tulips, & Ley, 1977; Smith, Kopfman, Morrison, & Ford, 1993).

Dependent Variables and Effect Size Measure

Dependent variables. Two dependent variables were of interest. The dependent variable of central interest was persuasiveness (as assessed through measures such as opinion change, postcommunication agreement, behavioral intention, behavior, and the like). When a single study contained multiple indices of persuasion, these were averaged to yield a single summary.

The other dependent variable was credibility (as assessed through measures of communicator or message credibility). Where multiple indices of credibility were available, these were averaged.

Effect size measure. Each comparison between a one-sided message and its two-sided counterpart was summarized using r as the effect size measure.

Differences favoring two-sided versions were given a positive sign; differences favoring one-sided versions were given a negative sign.

When correlations were averaged (e.g., across several dependent measures), the average was computed using the *r*-to-*z*-to-*r* transformation procedure, weighting by *n*. Wherever possible, multiple-factor designs were analyzed by reconstituting the analysis such that individual-difference factors (but not other experimental manipulations) were put back into the error term (following the suggestion of Johnson, 1989).

Independent Variables

Type of two-sided message. Cases were coded for the type of two-sided message employed. All two-sided messages contain both supportive arguments and acknowledgment of possible opposing arguments. Two main classes of two-sided messages—refutational and nonrefutational—were distinguished on the basis of how the opposing materials were handled.

The contrast between refutational and nonrefutational two-sided messages is a contrast between messages that undertake to attack directly (refute) opposing arguments and messages that acknowledge opposing arguments without attempting refutation; in a sense, the contrast might be expressed by saying that refutational messages attempt to remove the opposing reason, whereas nonrefutational messages do not (but typically might try to overwhelm it with supporting reasons). Refutation involves denying either the truth (e.g., "Some people say this economic policy will increase unemployment, but that's not so, because . . .") or the relevance (e.g., "It's true that my client was convicted of robberies in the past, but past convictions are not evidence of guilt in the current case") of the claim of an opposing argument.

Topic type. The message topics were classified as either advertising or nonadvertising topics. *Advertising* topics were ones in which the advocacy concerned some product or service; the exemplary forms were advertisements for consumer products such as beer, soap, or automobiles (but ads for business products or services were also classified in this category). *Nonadvertising* topics thus included sociopolitical topics (involving public policy questions, broadly understood, such as gun control, creationism, or local educational control) and other topics (such as hypothetical court cases and organ donation).

Audience favorability. Where possible, cases were coded for whether the position advocated by the message was one toward which the audience would generally be favorably or unfavorably disposed. These judgments relied on reported pretest scores or inspection of the population and message. For completely novel topics on which the audience could not possibly have an opinion, as with hypothetical brands of products or hypothetical court cases, the initial opinion was coded as "neutral."

Audience education. Where possible, cases were coded for the audience's level of education. The distinctions drawn were between audiences with no

college education, those with some college education, and those having graduated from college.

Counterargument availability. Cases were coded for the degree to which the audience would have access to possible counterarguments. Cases were classified as "high," "low," or "indeterminant" with respect to counterargument availability. This commonly required an estimate of the audience's ability to think up possible objections. In general, if the topic was one on which the audience might well be able to easily bring to mind possible objections, then counterargument availability would be deemed high. So, for instance, if the message topic was a sociopolitical issue that was timely and controversial, then counterargument availability would be presumed to be high (unless some special knowledge/background was likely required). In the case of ads for hypothetical brands of products, when the product class was familiar to the audience (e.g., the audience could be presumed to know something of other brands within that product class), then counterargument availability was coded as high (because the familiarity with the product class would presumably make the audience sensitive to potential shortcomings of the hypothetical brand).

Order of arguments. Two-sided messages can order supportive and opposing materials in at least three ways: first, supportive material followed by opposing material; second, opposing material followed by supporting material; and third, interweaving or alternation of supportive and opposing materials. Where possible, cases were coded for the order of materials in the two-sided message.

Coding reliabilities. Two coders independently classified 15 randomly-selected cases, yielding exact agreements as follows: 100% for type of two-sided message, 87% for topic type, 100% for audience favorability, 93% for audience educational level, 80% for counterargument availability, and 87% for order of arguments. As might be expected from the nature of the judgments involved, counterargument availability was the property most difficult to estimate reliably. All disagreements were resolved through discussion.[3]

Unit of Analysis

In considering how to analyze the present collection of studies, attention to the particular messages employed was important. Every analyzed study contains a comparison of a one-sided message with a two-sided message, and it might be thought that one could simply straightforwardly derive an effect size measure for each study. And indeed this way of proceeding would be appropriate if each study used only one message pair (i.e., compared just one one-sided message to its two-sided counterpart) and if each study used a different message pair (so that messages were never reused).

But these conditions do not hold in this literature. Some investigations have more than one one-sided/two-sided message pair (for instance, when several different topics were used, a different message pair was of course used for each), and some one-sided/two-sided message pairs are used in more than one study. If one is interested in generalizing across message pairs, the common meta-analytic procedure of treating each study as providing one effect size estimate is unsatisfactory.

Thus in the present analysis, the fundamental unit of analysis was the message pair (that is, the pair composed of a one-sided message and its experimental two-sided counterpart). A measure of effect size was recorded for each distinguishable message pair found in the body of studies. Thus, for example, a study reporting separate comparisons between one-sided and two-sided messages on two different topics contributed two observations (because it contained two one-sided/two-sided message pairs, one pair for each topic), whereas a study with a single message pair contributed only one.

Usually, a given message pair was used only in a single investigation, and hence only one effect size estimate was associated with the pair. But some message pairs were used in more than one study, and hence there could be several estimates available of the effect size associated with that message pair. These multiple estimates were averaged to yield a single summary estimate before inclusion in the analysis. Such cumulation occurred in the following cases (see Tables 6.1 and 6.4): Data from Study 1 and Study 2 in Ferrari and Leippe (1992) were combined and reported as "Ferrari and Leippe (1992)"; data from Kamins (1985), Kamins and Assael (1987a), Kamins and Assael (1987b, Experiment 1 and Experiment 2), and Kamins and Marks (1987) were combined and reported as "Kamins refutational"; data from Kamins (1985) and Kamins and Assael (1987b, pretest) were combined and reported as "Kamins nonrefutational"; and data from Ley, Bradshaw, Kincey, Couper-Smartt, and Wilson (1974) and Ley, Whitworth, Woodward, and Yorke (1977) were combined and reported as "Ley messages."

In some cases, the same primary data served as the basis for multiple reports. Sometimes this was made clear by the reports, typically when a given study was reported in a dissertation and in a subsequent journal article (the South African sanctions topic data reported in Allen et al. [1990, Replication 3], in Hale, Mongeau, & Thomas [1991], and in Thomas [1990], recorded here under Thomas [1990]; Belch [1980, 1981]; Earl [1979] and Earl & Pride [1980], recorded here under the former; Paulson [1953, 1954]; Stainback [1983] and Stainback & Rogers [1983], recorded here under the former; Swanson [1983, 1987]) or in both a convention paper and a subsequent publication (Reinard [1984, Experiment 1] and Reinard & Reynolds [1976], recorded here under the former; Smith, Morrison, Kopfman, & Ford [1994] and Smith, Morrison, Molnar, & Ford [1992], recorded here under the former). Sometimes the reports did not make this plain, as when the same primary data were reported (in whole or in part) more than once, without

acknowledgment of any relationship (the mass-transit topic data reported in Golden & Alpert [1978] and in Golden & Alpert [1987], recorded here under the former; the deodorant topic data reported in Alpert & Golden [1982] and in Golden & Alpert [1987], recorded here under the latter; Hunt, Domzal, & Kernan [1981] and Hunt & Kernan [1984], recorded here under the former; Hunt & Smith [1987], Hunt, Smith, & Kernan [1985], and Hunt, Smith, & Kernan [1989], recorded here under Hunt & Smith [1987]; Winkel [1984] and Winkel & Kosc [1983], recorded here under the former). Wherever it appeared that a given investigation was reported in more than one outlet, it was treated as a single study and analyzed accordingly.

Random-Effects Analysis

The individual correlations (effect sizes) were initially transformed to Fisher's *z*s; the *z*s were analyzed using random-effects procedures described by Shadish and Haddock (1994), with results then transformed back to *r*. A random-effects analysis was employed in preference to a fixed-effects analysis because of an interest in generalizing across messages (for discussion, see Erez, Bloom, & Wells, 1996; Jackson, 1992, p. 123; Raudenbush, 1994; Shadish & Haddock, 1994). In a random-effects analysis, the confidence interval around an obtained mean effect size reflects not only the usual (human) sampling variation, but also between-studies variance. This has the effect of widening the confidence interval over what it would have been in a fixed-effects analysis (see Shadish & Haddock, 1994, p. 275; for related discussion, see Raudenbush, 1994, p. 306).

RESULTS

Persuasion Effects

Overall effects. A total of 107 distinguishable persuasion effect sizes were available, based on 20,111 respondents. Details for each included case are contained in Table 6.1. The mean effect was –.001; there was no dependable difference in persuasive effectiveness between one-sided and two-sided messages (see Table 6.2).

Individual moderators. Table 6.2 summarizes the observed effects of the various moderator variables. As described there, the form of the two-sided message made a substantial difference to the message's persuasiveness. Refutational two-sided messages enjoyed a dependable persuasive advantage over one-sided messages (mean $r = .077$), whereas nonrefutational two-sided messages were significantly less persuasive than their one-sided counterparts (mean $r = -.049$).

One-sided and two-sided messages did not differ in persuasiveness as a function of whether the messages were advertisements. Neither with adver-

tising messages (mean $r = .002$) nor with nonadvertising messages (mean $r = -.003$) was there a significant difference in persuasiveness between one-sided and two-sided messages.

The audience's initial favorability toward the advocated view appears to have some influence on the relative effectiveness of one- and two-sided messages, though the number of relevant cases was rather small. One-sided messages were significantly more persuasive than two-sided messages when audiences were initially favorable (mean $r = -.138$) or initially unfavorable (mean $r = -.112$). When audiences were initially neutral, there was no significant difference in the effectiveness of one- and two-sided messages (mean $r = -.023$).

Because most investigations used undergraduates as participants, the research evidence concerning the role of audience education is naturally limited. However, this limited research offers little basis for believing that the audience's educational level moderates the general comparison of one- and two-sided messages. No matter whether the audience had no college education, had some college education, was composed of college graduates, or had some mixed or indeterminant level of education, there was no significant difference in effectiveness between one-sided and two-sided messages.

Relatively few investigations employed topics on which the audience could be presumed to have little access to potential counterarguments. But the evidence to date provides no indication that the availability of counterarguments moderates the general comparison of one- and two-sided messages. One-sided and two-sided messages did not differ in effectiveness as a function of the audience's availability of counterarguments.

The order of materials in the two-sided message did not influence the relative effectiveness of one- and two-sided messages. No matter whether the two-sided message discussed supporting arguments and then opposing ones, discussed opposing arguments and then supporting ones, or interwove the discussion of supporting and opposing arguments, one-sided and two-sided messages did not significantly differ in persuasive effectiveness.

Two-sided message type and other moderators. Because of the apparent importance of the contrast between refutational and nonrefutational two-sided messages with respect to persuasive effects, effects involving the joint operation of this moderator variable and other moderator variables are naturally of interest. For example, one might want to know whether the overall difference between refutational and nonrefutational two-sided messages obtains consistently across variations in audience education. Table 6.3 presents results displaying the persuasion effects associated with the joint operation of two-sided message type and each of the other moderator variables.

Unfortunately, as a rule the extant research evidence is insufficient to address such questions, because of the maldistribution of cases across the levels of the moderator. For example, the use of undergraduate respondents is so common in this research domain that the available evidence cannot speak

TABLE 6.1
Persuasion Cases

Study	*r*	*n*	*Codings*
Ahlawat (1991)			
refuted	−.012	261	1/1/2/4/2/1
unrefuted	−.070	261	2/1/2/4/2/1
Alden & Crowley (1995)	.115	281	2/1/4/2/2/4
Allen et al. (1990)			
Replication 1			
refutational, 55 mph	.158	57	1/2/4/2/2/3
refutational, creationism	.330	58	1/2/4/2/2/2
refutational, sex education	.198	54	1/2/4/2/2/4
refutational, prochoice (2)	−.029	53	1/2/4/2/2/2
refutational, adopted kids	−.038	54	1/2/4/2/3/2
refutational, drunk drivers	.296	57	1/2/4/2/2/3
refutational, children's ads	.172	53	1/2/4/2/2/1
nonrefutational, 55 mph	.094	59	2/2/4/2/2/3
nonrefutational, creationism	.082	59	2/2/4/2/2/2
nonrefutational, sex education	−.130	58	2/2/4/2/2/3
nonrefutational, prochoice (2)	−.004	59	2/2/4/2/2/2
nonrefutational, adopted kids	−.090	60	2/2/4/2/3/2
nonrefutational, drunk drivers	−.325	60	2/2/4/2/2/3
nonrefutational, children's ads	−.148	56	2/2/4/2/2/1
Replication 2			
refutational, INF treaty	.210	50	1/2/4/2/1/3
refutational, running	−.051	50	2/2/4/2/2/1
refutational, advertising	.255	64	1/2/4/2/2/4
refutational, SATs	−.122	49	1/2/4/2/2/4
refutational, anarchy	.093	53	1/2/4/2/3/3
refutational, family counseling	.010	52	1/2/4/2/3/3
refutational, political spots	.146	49	1/2/4/2/2/4
nonrefutational, INF treaty	.061	50	2/2/4/2/1/3
nonrefutational, running	−.105	50	2/2/4/2/2/1
nonrefutational, advertising	−.160	70	2/2/4/2/2/4
nonrefutational, SATs	−.209	50	2/2/4/2/2/4
nonrefutational, anarchy	.090	89	2/2/4/2/3/3
nonrefutational, family counseling	.238	52	2/2/4/2/3/4
nonrefutational, political spots	−.194	49	2/2/4/2/2/4
Replication 3			
refutational, elderly	.090	77	1/2/4/2/3/4
nonrefutational, elderly	−.060	77	2/2/4/2/3/4
Belch (1980, 1981)	−.046	230	2/1/2/4/2/3
Bettinghaus & Baseheart (1969)	−.200	120	2/2/3/2/3/3
Chebat et al. (1988)	.048	236	2/2/4/2/2/4
Chebat & Picard (1985)	.083	420	2/1/2/2/2/4
Cho (1996)			
computer	.042	148	1/1/2/4/2/4
coffee	.025	148	1/1/2/4/2/4
Chu (1967)	.012	273	1/2/4/1/3/2

TABLE 6.1
(Continued)

Study	*r*	*n*	*Codings*
Crane (1962)			
juvenile delinquency	.053	92	2/2/4/2/2/3
Red China recognition	.130	75	2/2/4/2/2/3
Crowley (1991)			
Study 1	−.465	175	2/1/2/2/2/3
Study 2	−.523	104	2/1/2/2/2/3
Dipboye (1977)	−.007	80	1/2/2/2/3/2
Dycus (1976)	.293	27	1/2/2/4/2/3
Etgar & Goodwin (1982)	.221	120	2/1/2/2/2/3
Ferguson & Jackson (1982)	−.080	383	1/1/2/2/2/4
Ferrari & Leippe (1992)	.113	79	1/2/4/2/2/4
Ford & Smith (1991)	.146	219	1/2/4/2/2/1
Gardner & Levin (1982)	−.242	40	2/1/2/4/2/4
Golden & Alpert (1987) deodorant	.121	236	2/1/2/4/2/3
Halverson (1975)	−.257	56	1/2/1/2/2/2
Hass & Linder (1972)			
Experiment 2	−.499	27	1/2/4/2/3/2
Experiment 3	.006	150	2/2/2/2/3/4
Hastak & Park (1990)	−.116	124	2/1/2/2/2/2
Hilyard (1966)	−.310	240	2/2/4/2/3/3
Hovland et al. (1949)	.001	402	2/2/4/4/3/4
Hunt & Smith (1987)	−.216	150	1/1/2/2/2/4
Jaksa (1968)	.019	1028	1/2/4/2/3/4
Jarrett & Sherriffs (1953)	−.365	487	2/2/4/2/4/3
Jones (1987)	.004	120	2/2/4/2/2/1
Jones & Brehm (1970)	−.505	84	2/2/2/2/1/4
Kamins refutational	.248	192	1/1/2/2/2/3
Kamins (1989)	.306	77	1/1/2/3/2/1
Kamins et al. (1989)	.290	52	2/1/2/3/2/3
Kamins & Marks (1988)	−.026	170	2/1/4/3/2/3
Kanungo & Johar (1975)	−.050	80	2/1/2/3/2/4
Kaplowitz & Fisher (1985)	.069	1600	2/2/1/4/2/3
Kiesler (1964)	.031	173	1/2/1/2/3/3
Koballa (1984)	.582	58	2/2/4/2/3/3
Koehler (1972)	.063	360	1/2/4/2/3/3
Ley messages	.206	113	1/2/4/4/2/4
Lilienthal (1973)	−.066	120	2/2/4/2/3/3
Lumsdaine & Janis (1953)	.057	88	2/2/4/1/3/3
McCroskey, Young, & Scott (1972)	.249	518	1/2/4/2/3/4
Merenski & Mizerski (1979)	.161	72	2/1/2/3/2/4
Nathan (1981)	−.083	192	1/2/2/2/3/3
Papageorgis (1963)	−.187	310	2/2/3/2/3/4

(continued)

TABLE 6.1
(Continued)

Study	*r*	*n*	*Codings*
Pardini & Katzev (1986)			
control versus 2	.095	40	1/1/4/4/3/4
1 versus 3	.392	40	1/1/4/4/3/4
Paulson (1953, 1954)	−.023	978	2/2/4/2/2/3
Pechmann (1992)			
Study 1	.143	240	2/1/2/4/2/1
Study 2	−.340	80	2/1/2/4/2/1
Rahaim (1984)	.142	110	1/2/4/4/3/3
Reinard (1984)			
Experiment 1	−.027	120	2/2/4/2/3/4
Experiment 2	−.095	360	2/2/4/2/2/4
Roering & Paul (1976)	.022	240	2/1/2/2/2/4
Rosnow (1968)	−.218	197	2/2/4/2/2/4
Sandler (1988)	.183	158	2/1/2/2/2/1
Schanck & Goodman (1939)	−.048	714	2/2/4/3/4/4
Settle & Golden (1974)	.005	120	2/1/2/2/2/4
Sherman, Greene, & Plank (1991)	.082	1173	2/1/4/3/2/4
Sinha & Dhawan (1971)	−.011	100	2/2/4/2/2/4
Smith et al. (1994)	−.050	103	1/2/4/2/2/1
Sorrentino et al. (1988)	−.330	114	2/2/4/2/2/3
Stayman et al. (1987)			
alarm clock	−.149	180	2/1/2/2/2/1
record store	.134	180	2/1/2/2/2/1
Swanson (1983, 1987)			
automobile	.047	311	2/1/4/4/2/2
car wax	−.038	311	2/1/4/4/2/2
Swinyard (1981)	−.049	578	2/1/4/4/2/4
Thomas (1990)			
refutational	.089	130	1/2/4/4/3/3
nonrefutational	−.099	134	2/2/4/4/3/1
Williams et al. (1993)			
Study 1	.141	170	1/2/2/2/1/1
Study 2	.072	97	1/2/2/2/3/4
Williams (1976)	−.061	163	2/1/4/2/2/4
Winkel (1984)	.056	191	1/2/4/2/2/1

NOTE: The coding judgments, in order, are as follows: two-sided message type (1 = refutational, 2 = nonrefutational), topic area (1 = advertising, 2 = nonadvertising), audience initial attitude (1 = favorable, 2 = neutral, 3 = unfavorable, 4 = indeterminant/varied), audience educational level (1 = no college, 2 = some college, 3 = college graduate, 4 = indeterminant/varied), counterargument availability (1 = low, 2 = high, 3 = indeterminant/varied), order of arguments in two-sided message (1 = support then oppose, 2 = oppose then support, 3 = interwoven, 4 = indeterminant).

effectively to the question of whether audience education influences the impact of the refutational-versus-nonrefutational contrast. Of the 88 cases having a distinct level of audience education, 79 involved undergraduates (32 refutational, 47 nonrefutational); only 4 involved respondents without any

TABLE 6.2
Persuasion Effects: Summary of Results

	k	*Mean r*	*95% CI*	*Q (df)*
All cases	107	–.001	–.039, .036	494.1 (106)***
Refutational	42	.077	.026, .128	102.7 (41)***
Nonrefutational	65	–.049	–.098, –.000	352.0 (64)***
Advertising	35	.002	–.068, .071	179.3 (34)***
Nonadvertising	72	–.003	–.048, .042	313.5 (71)***
Favorable initial attitude	10	–.138	–.266, –.009	116.6 (9)***
Unfavorable initial attitude	9	–.112	–.213, –.010	37.7 (8)***
Neutral initial attitude	36	–.023	–.096, .049	195.5 (35)***
Indeterminant/varied attitude	69	.014	–.029, .058	275.8 (68)***
No college education	4	–.021	–.090, .048	2.0 (3)
Some college education	79	–.019	–.065, .028	415.2 (78)***
College graduate	5	.109	–.033, .252	11.0 (4)*
Indeterminant/varied education	24	.034	–.030, .098	54.4 (23)***
High counterargument availability	72	.005	–.040, .051	273.7 (71)***
Low counterargument availability	7	.051	–.240, .342	47.3 (6)***
Indeterminant/varied availability	33	.003	–.069, .075	196.0 (32)***
Support-then-oppose order	22	–.006	–.073, .061	67.5 (21)***
Oppose-then-support order	17	–.055	–.145, .035	34.5 (16)**
Alternation/interwoven	36	.004	–.076, .084	277.3 (35)***
Indeterminant/varied order	41	–.000	–.052, .052	144.8 (40)***

NOTE: Studies that provided a within-study comparison of interest (e.g., a study that included college undergraduates and college graduates, with results reported separately for these conditions) contributed effect sizes to both the relevant specific categories ("some college education" and "college graduate") and the "indeterminant/varied" category. As a result, the number of cases summed across levels of a given moderator sometimes exceeds the total number of cases (107).

*$p < .05$; **$p < .01$; ***$p < .001$.

college education (1 refutational, 3 nonrefutational) and only 5 involved college graduates (1 refutational, 4 nonrefutational). In such a circumstance, little can be learned about the joint effects of two-sided message type and audience educational level. For similar reasons, it was not possible to examine usefully the interplay of two-sided message type with variations in initial attitude or counterargument availability.

However, examination of the joint effect of two-sided message type and message topic revealed that the apparent superiority of refutational over nonrefutational forms did not obtain across both advertising and nonadvertising messages. Although for nonadvertising messages there was a dependable advantage for refutational over nonrefutational two-sided messages (refutational mean $r = .081$; nonrefutational mean $r = -.069$), this difference was not apparent for advertising messages. Neither refutational (mean $r = .072$) nor nonrefutational (mean $r = -.022$) two-sided advertising messages were dependably more persuasive than their one-sided counterparts.

TABLE 6.3
Persuasion Effects: Two-Sided Message Type and Other Moderators

	Refutational	*Nonrefutational*
Message topic		
advertising		
mean *r*	.072	−.022
95% CI	−.057, .200	−.102, .058
k	9	26
Q (*df*)	35.3 (8)***	143.7 (25)***
nonadvertising		
mean *r*	.081	−.069
95% CI	.025, .137	−.131, −.007
k	33	39
Q (*df*)	64.0 (32)***	193.7 (38)***
Audience initial attitude		
favorable		
mean *r*	−.024	−.201
95% CI	−.156, .108	−.386, −.016
k	4	6
Q (*df*)	3.9 (3)	111.6 (5)***
unfavorable		
mean *r*	.027	−.150
95% CI	−.076, .129	−.262, .038
k	2	7
Q (*df*)	0.0 (1)	30.3 (6)***
neutral		
mean *r*	.042	−.065
95% CI	−.040, .124	−.166, .035
k	13	23
Q (*df*)	36.2 (12)***	155.0 (22)***
indeterminant/varied		
mean *r*	.106	−.042
95% CI	.043, .169	−.095, .011
k	28	41
Q (*df*)	53.1 (27)**	172.3 (40)***
Audience education		
no college		
mean *r*	.012	−.038
95% CI		−.122, .047
k	1	3
Q (*df*)		1.6 (2)
some college		
mean *r*	.064	−.071
95% CI	.003, .124	−.132, −.009
k	32	47
Q (*df*)	86.9 (31)***	269.1 (46)***
college graduate		
mean *r*	.306	.070
95% CI		−.065, .205
k	1	4
Q (*df*)		7.0 (3)

TABLE 6.3
(Continued)

	Refutational	*Nonrefutational*
indeterminant/varied		
mean *r*	.093	−.003
95% CI	.016, .170	−.083, .076
k	9	15
Q (*df*)	10.2 (8)	40.6 (14)***
Counterargument availability		
high		
mean *r*	.084	−.034
95% CI	.020, .149	−.090, .023
k	24	48
Q (*df*)	59.5 (23)***	205.7 (47)***
low		
mean *r*	.053	.076
95% CI	−.091, .197	−.636, .787
k	4	3
Q (*df*)	5.6 (3)	37.0 (2)***
indeterminant/varied		
mean *r*	.054	−.041
95% CI	−.033, .141	−.157, .075
k	17	16
Q (*df*)	41.2 (16)***	105.3 (15)***
Order of two-sided materials		
support then oppose		
mean *r*	.055	−.050
95% CI	−.044, .154	−.134, .034
k	9	13
Q (*df*)	18.8 (8)*	43.7 (12)***
oppose then support		
mean *r*	−.079	−.039
95% CI	−.246, .088	−.096, .018
k	9	8
Q (*df*)	26.4 (8)***	7.9 (7)
alternation/interwoven		
mean *r*	.084	−.055
95% CI	.039, .129	−.169, .059
k	13	23
Q (*df*)	17.3 (12)	232.9 (22)***
indeterminant/varied		
mean *r*	.078	−.046
95% CI	.005, .151	−.107, .015
k	16	25
Q (*df*)	53.1 (15)***	79.1 (24)***

*$p < .05$; **$p < .01$; ***$p < .001$.

The evidence concerning the role of the order of materials in the two-sided message appears to suggest that the general advantage of refutational over nonrefutational two-sided messages is confined to cases in which the opposing and supporting materials are interwoven: In such cases, refutational two-sided messages enjoyed a dependable advantage over one-sided messages (mean $r = .084$), but nonrefutational two-sided messages did not (mean $r = -.055$). When the two-sided message discussed supporting arguments and then opposing arguments, or discussed opposing arguments and then supporting considerations, there was no dependable advantage for either refutational or nonrefutational two-sided messages.

Credibility Effects

Overall effects. A total of 56 distinguishable credibility effect sizes were available, based on 6,937 respondents. Details for each included case are contained in Table 6.4. The mean effect was .091, a significant advantage in perceived credibility for two-sided messages (see Table 6.5).

Individual moderators. The results for the individual moderator variables are summarized in Table 6.5. As indicated there, the general credibility advantage of two-sided messages did not vary as a function of whether the two-sided message was refutational or nonrefutational: Significantly greater credibility resulted from both refutational (mean $r = .113$) and nonrefutational (mean $r = .078$) two-sided messages.

The general credibility advantage of two-sided messages, however, appears restricted to advertising messages (mean $r = .148$). There was no significant difference in perceived credibility between one-sided and two-sided nonadvertising messages (mean $r = .036$). Indeed, the difference between advertising and nonadvertising messages in the size of the two-sided message's credibility advantage was itself marginally significant ($p < .10$).

No studies examined credibility effects with audiences having initially favorable or initially unfavorable attitudes. However, the general advantage of two-sided messages was obtained both in studies in which the audience had an initially neutral attitude (mean $r = .130$) and in studies in which the audience's initial attitude was indeterminant or mixed (mean $r = .066$).

Evidence about the possible effects of the audience's education level on the credibility advantage enjoyed by two-sided messages is limited, by virtue of most studies' having used undergraduate respondents. What very little evidence exists, however, does not hint at any dependable variation in effect across educational level.

Few studies examined credibility effects in circumstances in which counterargument availability was low, undermining any firm conclusions about the role of counterargument availability variations. But one may be confident that the credibility advantage of two-sided messages obtains in circumstances

in which the audience has access to potential counterarguments (mean r = .099).

The order of materials in the two-sided message appears to influence the relative credibility advantage of one- and two-sided messages (although, again, the research evidence is not extensive). Two-sided messages led to significantly greater credibility than their one-sided counterparts when the two-sided messages either discussed supporting arguments first, followed by opposing arguments (mean r = .096), or discussed supporting and opposing considerations in an interwoven fashion (mean r = .141). By contrast, there was no significant difference in perceived credibility when the two-sided messages discussed opposing arguments before giving supporting arguments (mean r = .014), though few studies of this latter sort exist.

Message topic and other moderators. Because of the apparent importance of message topic variations (specifically, the contrast between advertising and nonadvertising messages) with respect to credibility effects, the joint operation of this moderator with other moderators invites inspection. Table 6.6 displays the credibility effects associated with the joint operation of message topic and each of the other moderator variables.

As will be apparent, the small number of available cases and the uneven distribution of cases across levels of the moderator variable impairs the usefulness of such analysis. For example, there were only four cases in which the audience had a distinguishable level of education other than that of college undergraduate (one case with respondents without any college education, three cases with respondents with college degrees), making impossible any useful examination of the interplay of the advertising-nonadvertising contrast with audience educational level. For similar reasons, it was not useful to consider the joint effects of message topic variations and variations in initial audience attitude or counterargument availability.

However, examination of the joint effect of message topic and two-sided message type indicated that refutational and nonrefutational forms had varying effects on credibility perceptions with advertising and nonadvertising messages. Specifically, for nonadvertising messages, refutational two-sided messages significantly enhanced credibility compared with their one-sided counterparts (mean r = .117), but nonrefutational two-sided messages did not (mean r = –.035). For advertising messages, nonrefutational two-sided messages produced significantly greater perceived credibility than one-sided messages (mean r = .160); refutational advertising messages did not dependably enhance credibility (mean r = .089), but there were very few relevant cases (k = 4). The enhanced credibility (compared with one-sided messages) of nonrefutational two-sided messages was significantly greater in advertising than in nonadvertising messages ($p < .01$).

With respect to the order of materials in two-sided messages, there were generally too few cases to permit confident conclusions. However, two-sided messages with interwoven supportive and opposing material produced

TABLE 6.4
Credibility Cases

Study	*r*	*n*	*Codings*
Alden & Crowley (1995)	.109	283	2/1/4/2/2/4
Allen et al. (1990)			
Replication 1			
refutational, 55 mph	.162	57	1/2/4/2/2/3
refutational, creationism	.280	58	1/2/4/2/2/2
refutational, sex education	.303	54	1/2/4/2/2/4
refutational, prochoice (2)	−.024	53	1/2/4/2/2/2
refutational, adopted kids	−.001	54	1/2/4/2/3/2
refutational, drunk drivers	.370	57	1/2/4/2/2/3
refutational, children's ads	.250	53	1/2/4/2/2/1
nonrefutational, 55 mph	.101	59	2/2/4/2/2/3
nonrefutational, creationism	.049	59	2/2/4/2/2/2
nonrefutational, sex education	−.142	58	2/2/4/2/2/3
nonrefutational, prochoice (2)	−.015	59	2/2/4/2/2/2
nonrefutational, adopted kids	−.085	60	2/2/4/2/3/2
nonrefutational, drunk drivers	−.193	60	2/2/4/2/2/3
nonrefutational, children's ads	−.095	56	2/2/4/2/2/1
Replication 2			
refutational, INF treaty	.122	50	1/2/4/2/1/3
refutational, running	−.061	50	2/2/4/2/2/1
refutational, advertising	.186	64	1/2/4/2/2/4
refutational, SATs	−.205	49	1/2/4/2/2/4
refutational, anarchy	.071	53	1/2/4/2/3/3
refutational, family counseling	.232	52	1/2/4/2/3/3
refutational, political spots	.191	49	1/2/4/2/2/4
nonrefutational, INF treaty	.051	50	2/2/4/2/1/3
nonrefutational, running	−.087	50	2/2/4/2/2/1
nonrefutational, advertising	−.143	70	2/2/4/2/2/4
nonrefutational, SATs	−.186	50	2/2/4/2/2/4
nonrefutational, anarchy	.020	89	2/2/4/2/3/3
nonrefutational, family counseling	.219	52	2/2/4/2/3/4
nonrefutational, political spots	−.291	49	2/2/4/2/2/4
Chebat & Picard (1988)	.086	434	2/1/2/2/2/4
Cho (1996)	.156	296	1/1/2/4/2/4
Crowley (1991) Study 2	.468	104	2/1/2/2/2/3
Earl (1979)	.003	372	2/1/2/2/2/4
Golden & Alpert (1978)	.168	292	2/1/4/4/2/3
Hastak & Park (1990)	−.043	124	2/1/2/2/2/2
Hunt, Domzal, & Kernan (1981)	.068	114	2/1/2/2/2/4
Hunt & Smith (1987)	−.202	150	1/1/2/2/2/4
Jones & Brehm (1970)	−.020	84	2/2/2/2/1/4
Kamins refutational	.208	410	1/1/2/2/2/3
Kamins nonrefutational	.188	257	2/1/2/2/2/3
Kamins (1989)	.185	76	1/1/2/3/2/1
Kamins et al. (1989)	.420	52	2/1/2/4/2/3

TABLE 6.4
(Continued)

Study	*r*	*n*	*Codings*
Kamins & Marks (1988)	.238	170	2/1/4/3/2/3
Kanungo & Johar (1975)	.060	96	2/1/2/3/2/4
Koehler (1972)	.029	360	1/2/4/2/3/3
Lilienthal (1973)	.091	120	2/2/4/2/3/3
Pechmann (1992)			
Study 1	.151	240	2/1/2/4/2/1
Study 2	.266	80	2/1/2/4/2/1
Sandler (1988)	.174	158	2/1/2/2/2/1
Smith & Hunt (1978)	.197	212	2/1/2/4/2/4
Stainback (1983)	−.038	100	1/2/4/1/2/3
Stayman et al. (1987)			
alarm clock	.072	180	2/1/2/2/2/1
record store	.095	180	2/1/2/2/2/1
Swinyard (1981)	.299	155	2/1/4/4/2/4
Thomas (1990)			
refutational	.110	130	1/2/4/4/3/3
nonrefutational	−.030	134	2/2/4/4/3/1

NOTE: The coding judgments, in order, are as follows: two-sided message type (1 = refutational, 2 = nonrefutational), topic area (1 = advertising, 2 = nonadvertising), audience initial attitude (1 = favorable, 2 = neutral, 3 = unfavorable, 4 = indeterminant/varied), audience educational level (1 = no college, 2 = some college, 3 = college graduate, 4 = indeterminant/varied), counterargument availability (1 = low, 2 = high, 3 = indeterminant/varied), order of arguments in two-sided message (1 = support then oppose, 2 = oppose then support, 3 = interwoven, 4 = indeterminant).

dependably greater credibility enhancement (relative to one-sided messages) in advertising messages (mean r = .263) than in nonadvertising messages (mean r = .064).

DISCUSSION

Some Key General Findings

Classic moderators. As discussed previously, variables such as initial audience attitude, audience education, counterargument availability, and order of arguments are commonly mentioned as moderators of the persuasive effects of sidedness variations. In the present findings, none of these variables displayed the typically ascribed effects.

There is no support for the conventional view that one-sided messages are to be preferred with audiences initially favorable to the advocated view, but

TABLE 6.5
Credibility Effects: Summary of Results

	k	*mean r*	*95% CI*	*Q (df)*
All cases	56	.091	.048, .134	126.0 (55)***
Refutational	20	.113	.047, .179	41.2 (19)**
Nonrefutational	36	.078	.023, .133	84.5 (35)***
Advertising	22	.148	.085, .211	62.2 (21)***
Nonadvertising	34	.036	−.018, .090	47.3 (33)*
Neutral initial attitude	19	.130	.057, .202	56.6 (18)***
Indeterminant/varied attitude	37	.066	.014, .118	66.2 (36)**
No college education	1	−.038		
Some college education	44	.065	.016, .113	95.2 (43)***
College graduate	3	.178	.070, .285	2.0 (2)
Indeterminant/varied education	9	.181	.096, .266	13.5 (8)
High counterargument availability	43	.099	.044, .153	114.9 (42)***
Low counterargument availability	3	.037	−.111, .185	0.6 (2)
Indeterminant/varied availability	10	.050	−.010, .110	6.1 (9)
Support-then-oppose order	11	.096	.021, .171	12.8 (10)
Oppose-then-support order	7	.014	−.078, .107	5.3 (6)
Alternation/interwoven	20	.141	.066, .216	47.3 (19)***
Indeterminant/varied order	18	.056	−.028, .141	50.1 (17)***

NOTE: Studies that provided a within-study comparison of interest (e.g., a study that included college undergraduates and college graduates, with results reported separately for these conditions) contributed effect sizes to both the relevant specific categories ("some college education" and "college graduate") and the "indeterminant/varied" category. As a result, the number of cases summed across levels of a given moderator sometimes exceeds the total number of cases (56).

*$p < .05$; **$p < .01$; ***$p < .001$.

that two-sided messages are more persuasive with opposed audiences. There have been relatively few studies in which the audience's initial attitude was either favorable or unfavorable, but in both such circumstances one-sided messages appear to enjoy a dependable persuasive advantage.

The typical summary suggests that lower levels of audience education recommend the use of one-sided messages, whereas at higher levels of education two-sided messages are to be preferred. There is only limited evidence available on this question, but the evidence in hand gives no support for such a view.

A common suggestion is that as the audience has more counterarguments ready to hand, the persuasive advantage of two-sided messages will correspondingly increase. There is little empirical evidence bearing on this claim, in good part because few studies have examined the persuasive effects of sidedness variations under conditions in which the audience might be pre-

sumed to have relatively little access to counterarguments. What evidence is available, however, gives this suggestion no support.

Finally, contrary to previous suggestions, the present review found no overall dependable differences among the various ways of organizing two-sided messages. For instance, there is no indication here that two-sided messages have a persuasive advantage when opposing materials are discussed after supporting materials but not when opposing materials are discussed before supporting materials.

Refutational and nonrefutational two-sided messages. Previous reviews have pointed to the importance of distinguishing refutational and nonrefutational two-sided forms (Allen, 1991, 1994; Jackson & Allen, 1987), a conclusion underscored by the present findings. Refutational two-sided messages do appear to enjoy a persuasive advantage (over one-sided messages) that nonrefutational two-sided messages do not.

But this advantage may be less general than previously supposed. In particular, although there is a substantial difference between refutational and nonrefutational forms in persuasive effectiveness for nonadvertising messages, that difference appears to be muted for advertising messages. For nonadvertising messages, refutational two-sided messages are significantly more persuasive than one-sided messages, and nonrefutational two-sided messages are significantly less persuasive than one-sided messages; the 95% confidence intervals for these mean effects do not overlap. For advertising messages, neither refutational nor nonrefutational two-sided messages are significantly more persuasive than their one-sided counterparts; the relevant 95% confidence intervals overlap substantially. Taken at face value, these results suggest that the effects of refutational and nonrefutational messages (compared with one-sided messages) are not consistent across advertising and nonadvertising contexts.

However, one should bear in mind the relatively small number of studies of the persuasive effects of refutational advertising ($k = 9$). Given this number of cases, and given the surface similarity in mean persuasive advantages of refutational messages over one-sided messages in nonadvertising (mean $r = .081$) and advertising (mean $r = .072$) contexts, one might entertain a suspicion that in fact there are consistent effects of refutational messages (compared with their one-sided counterparts) in advertising and nonadvertising circumstances.

But it is more difficult to sustain a belief that nonrefutational messages have consistent effects across these contexts. The number of nonrefutational advertising studies is substantial ($k = 26$), and yet the persuasive effects in these studies vary from those observed in nonadvertising studies. In nonadvertising contexts, nonrefutational messages produce significantly less persuasion than do one-sided messages, but no such significant difference obtains in the case of advertising messages. As a result, in nonadvertising

TABLE 6.6
Credibility Effects: Message Topic and Other Moderators

	Advertising	*Nonadvertising*
Two-sided message type		
refutational		
mean *r*	.089	.117
95% CI	−.101, .280	.045, .190
k	4	16
Q (*df*)	19.6 (3)***	21.3 (15)
nonrefutational		
mean *r*	.160	−.035
95% CI	.095, .225	−.093, .023
k	18	18
Q (*df*)	42.4 (17)***	14.9 (17)
Audience initial attitude		
neutral		
mean *r*	.136	−.020
95% CI	.062, .211	
k	18	1
Q (*df*)	54.9 (17)***	
indeterminant/varied		
mean *r*	.192	.038
95% CI	.109, .276	−.017, .094
k	4	33
Q (*df*)	4.5 (3)	47.1 (32)*
Audience education		
no college		
mean *r*		−.038
k	0	1
some college		
mean *r*	.102	.039
95% CI	.014, .190	−.020, .099
k	13	31
Q (*df*)	44.7 (12)***	45.5 (30)*
college graduate		
mean *r*	.178	
95% CI	.070, .285	
k	3	0
Q (*df*)	2.0 (2)	
indeterminant/varied		
mean *r*	.209	.039
95% CI	.136, .282	−.098, .177
k	7	2
Q (*df*)	6.5 (6)	1.3 (1)

contexts there is a sharp difference between refutational and nonrefutational two-sided forms compared with one-sided messages, but that difference is not so marked in advertising contexts.

TABLE 6.6
(Continued)

	Advertising	*Nonadvertising*
Counterargument availability		
high		
mean *r*	.148	.022
95% CI	.086, .211	–.062, .105
k	22	21
Q (*df*)	62.2 (21)***	40.1 (20)**
low		
mean *r*		.037
95% CI		–.111, .185
k	0	3
Q (*df*)		0.6 (2)
indeterminant/varied		
mean *r*		.050
95% CI		–.010, .110
k	0	10
Q (*df*)		6.1 (9)
Order of two-sided materials		
support then oppose		
mean *r*	.141	–.007
95% CI	.076, .207	–.131, .115
k	6	5
Q (*df*)	2.9 (5)	4.4 (4)
oppose then support		
mean *r*	–.043	.036
95% CI		–.073, .144
k	1	6
Q (*df*)		4.7 (5)
alternation/interwoven		
mean *r*	.263	.064
95% CI	.151, .375	–.008, .136
k	6	14
Q (*df*)	11.7 (5)*	16.0 (13)
indeterminant/varied		
mean *r*	.089	.007
95% CI	–.002, .181	–.140, .155
k	9	9
Q (*df*)	26.9 (8)***	20.5 (8)**

*$p < .05$; **$p < .01$; ***$p < .001$.

Effects on Credibility. Although credibility has often been mentioned as a possible mediator of sidedness effects (e.g., Allen, 1991, 1994), previous reviews have not systematically considered the effects of sidedness variations on credibility perceptions. One striking general aspect of the present results is the absence of a general parallelism between effects on persuasion and effects on credibility. If credibility perceptions were the key mediating factor

influencing the persuasive effects of sidedness variations, then, broadly speaking, the patterns of effects (of sidedness variations) on credibility perceptions should mirror the patterns of effects on persuasive outcomes. But there is no such simple mirroring in these results. For example, even though two-sided messages yield generally greater credibility than their one-sided counterparts, there is no corresponding general difference in persuasiveness between one- and two-sided messages. Such divergences suggest that we cannot explain sidedness's persuasive effects satisfactorily by positing a simple mediating role for credibility.

Previous Explanations

Earlier explanations of sidedness effects sought to account for then-current understandings of the patterns of outcomes associated with sidedness variations. Perhaps it is unsurprising that these explanations prove unsatisfactory in accounting for the present results.

Counterargument Availability. Hovland et al.'s (1949, esp. pp. 270-271) explanation of sidedness effects emphasized one key general moderating factor and two possible mediating factors. A central moderating role was given to the receiver's ability to generate counterarguments (that is, arguments opposed to the advocated view). The suggestion was that for persons capable of generating counterarguments (e.g., persons initially opposed to the advocated view, or persons with greater educational achievement or intellectual capability), two-sided messages will be more persuasive than one-sided messages; for persons not so capable of generating counterarguments, one-sided messages will be more persuasive than two-sided messages.

Two mediating states were mentioned as possibly underlying such effects. One was the receiver's judgment of the communicator's credibility; for persons capable of generating counterarguments, the one-sided message was thought to appear to be biased and so would be less persuasive. The other was the audience's mental rehearsal of counterarguments; the expectation was that for persons capable of generating such counterarguments, the one-sided message would fail to forestall such rehearsal (compared with the two-sided message), thus impairing its persuasive effectiveness.

This account does not fare well given the evidence of the present review. Though the research evidence is limited, there is no indication that the hypothesized key moderating factor—the audience's availability of counter arguments—influences the relative persuasiveness of one-sided and two sided messages. Moreover, the findings concerning more specific factors tha might influence counterargument availability (namely, the audience's initia position and educational level), though also based on small numbers of cases. offer no support to this account: Educational level appears not to influence

the persuasiveness of one- and two-sided messages, and one-sided messages are significantly more persuasive than two-sided messages for both initially unfavorable and initially favorable audiences. And, finally, sidedness's effects on credibility do not mirror its effects on persuasive outcomes in the fashion this explanation would suggest.

Reactance. A reactance-based explanation of sidedness effects has been offered by Brehm and Brehm (1981, pp. 12-15; see also Brehm, 1966). These authors suggest that, at least among persons who are aware of the existence of two plausible sides on the issue, two-sided messages will be more persuasive than one-sided messages because a one-sided message represents greater pressure to endorse the advocated view, which will arouse reactance (and thus behavior aimed at restoring threatened freedom). Hence the advantage of two-sided messages would be expected to be especially marked when the audience knows of opposing views—as they would if they held such opposing views, or if they had counterarguments readily available. But such factors do not appear to moderate sidedness effects in the expected ways. As one example, one-sided messages are significantly more persuasive than two-sided messages when audiences are either initially favorable or initially unfavorable.

We might revise this original reactance explanation by attending to the distinction between refutational and nonrefutational two-sided messages. Refutational two-sided messages probably represent greater pressure to endorse than do one-sided messages; refutational two-sided messages have the supporting argumentation characteristic of one-sided messages, plus an explicit attack on counterarguments. By contrast, a nonrefutational two-sided message at least leaves open the possibility that an opposing view would have some merit, and so plausibly might be supposed to represent less pressure to endorse than would a one-sided message. Thus a revised reactance account might suggest that, at least among receivers aware of the existence of two plausible sides, refutational two-sided messages would be the least persuasive (because they represent the greatest pressure to agree), nonrefutational two-sided messages the most persuasive (because they represent the least pressure), and one-sided messages somewhere in between. But even this revised account finds little support in the present findings. For example, among receivers with relatively high availability of counterarguments, refutational two-sided messages are significantly *more* persuasive than one-sided messages—precisely opposite to the expected effect.

Elaboration-Based Message Evaluation. Hale et al. (1991) propose a model in which sidedness variations influence elaboration (the generation of topic-relevant thoughts), which then influences global message evaluations (about bias, fairness, accuracy, and so on), which in turn influence receivers' attitudes. Thus this account suggests that, for instance, a refutational two-

sided message might lead receivers to have a greater number of positive thoughts about the position advocated than would a one-sided message, which would lead the two-sided message to be evaluated more positively than the one-sided message, which in turn causes the two-sided message to be more persuasive.

It is difficult to reconcile this model with the research evidence reviewed here. On this account, credibility-related beliefs (evaluations of the degree to which the message is fair, unbiased, informed, and so on) play a key mediating role, and indeed are the proximate cause of sidedness-related attitude change effects. Hence as credibility judgments vary, so (ceteris paribus) should persuasiveness. But, as discussed previously, no such parallelism obtains.

Accounting for Sidedness Effects

The elaboration likelihood model (ELM) describes three possible ways in which a given variable might influence the amount and direction of attitude change (see Petty & Cacioppo, 1986, pp. 16-19): by serving as a persuasive argument, by serving as a peripheral cue, or by influencing the direction or extent of elaboration (issue-relevant thinking). The ELM permits a variable to function in more than one of these ways in different circumstances; for instance, the physical attractiveness of the communicator might commonly serve as a peripheral cue (affecting the receiver's liking for the communicator, and so influencing the operation of a heuristic principle based on liking) but in some circumstances serve as an argument (e.g., in advertisements for beauty products). This might offer a useful framework for explaining sidedness effects.[4]

Nonadvertising Messages. Consider first the case of nonadvertising messages. Sidedness variations might be thought of simply as producing variations in argumentative content (persuasive arguments). Compared with their one-sided counterparts, a nonrefutational two-sided message provides additional arguments opposing the advocated view and a refutational two-sided message provides additional arguments supporting the advocated view. Approached in this way, it is perhaps unsurprising that nonrefutational nonadvertising messages should prove significantly less persuasive, and refutational nonadvertising messages significantly more persuasive, than one-sided messages.

One curiosity concerning the observed effects in nonadvertising contexts is that nonrefutational two-sided messages do not enjoy the same credibility advantage (over one-sided messages) that refutational two-sided messages do. The curiosity arises because, in some sense, the refutational two-sided message does not actually concede anything to opposing views (because it tries to undermine possible counterarguments). The nonrefutational two-

sided message might, at least on its face, seem to offer a more candid, less biased, appraisal of the advocated view (because it acknowledges shortcomings without attempting to undermine them). It may simply be that, in nonadvertising contexts, refutation of counterarguments conveys authoritativeness in a way that nonrefutational acknowledgment of counterarguments does not.

Nonrefutational Advertising Messages. Advertising messages present a somewhat more complex picture. Consider first the case of nonrefutational advertising messages. Broadly put, nonrefutational messages do not suffer the same negative consequences in advertising contexts as they do in nonadvertising contexts. In nonadvertising contexts, nonrefutational messages gain no credibility advantage over their one-sided counterparts and are significantly less persuasive; but in advertising contexts, nonrefutational messages are perceived as more credible than their one-sided counterparts and are not significantly different in persuasiveness.

The observed difference in credibility effects between advertising and nonadvertising contexts may reflect the receiver's differing initial expectations about the communicator. Consumer advertising is likely to be met with a good deal of skepticism (about advertising in general or about the specific advertisement encountered). Indeed, by the time they are adolescents, people are "already about as mistrustful of advertising as they can reasonably be" (Boush, Friestad, & Rose, 1994, p. 172). Given this general skepticism, consumers may well anticipate that advertisers will give a one-sided depiction of the advertised product or service, suppressing any undesirable aspects of the advertised object. When instead an advertiser freely acknowledges the opposing considerations, the advertiser's credibility will naturally be enhanced. This effect thus may be related to the well-established finding that communicators advocating unexpected positions (e.g., positions opposed to their apparent self-interests) can enjoy enhanced credibility (Eagly & Chaiken, 1975; Eagly, Wood, & Chaiken, 1978; Walster, Aronson, & Abrahams, 1966; Wood & Eagly, 1981).

Thus nonrefutational acknowledgment of counterarguments boosts the credibility of advertising but not nonadvertising, because the greater initial cynicism regarding advertising permits such acknowledgment to have positive effects on credibility for advertising messages. For nonadvertising messages, the absence of initial skepticism makes any nonrefutational acknowledgment of counterarguments comparatively less surprising (and so relatively ineffective in enhancing credibility).

And, correspondingly, nonrefutational acknowledgment of counterarguments damages the persuasiveness of nonadvertising messages but not that of advertising messages. For nonadvertising messages, whose communicators do not face the entrenched cynicism encountered by advertisers, acknow-

ledgment of counterarguments may not enhance their credibility very much (and so will not enhance acceptance of their supportive reasons), but instead can simply arm the audience with apparently good reasons (persuasive arguments) for rejecting the advocated view, leading to the observed dependably negative effect on persuasion.

For advertising messages, the credibility-enhancement effect of the nonrefutational acknowledgment of counterarguments could have varying effects. It might enhance the believability of both the supportive arguments and the acknowledged counterarguments, with these effects generally canceling each other out. It might boost the counterarguments more than the supportive arguments, thus making the advertisement less persuasive than it would have been. Or the supportive arguments might enjoy the greater benefit of the credibility enhancement, thereby making the advertisement more persuasive. Across a number of nonrefutational advertisements, then, one might well expect to find no dependable overall difference in persuasiveness but a good deal of heterogeneity in effects—which is precisely the pattern observed here.

But these diverse persuasion effects might arise in another way. The enhanced credibility might operate not as a peripheral cue (enhancing the general believability of the message) but as a goad to elaboration. That is, the unexpected candor of a nonrefutational advertising message might evoke closer message scrutiny—which could produce either enhanced or reduced persuasion (depending on, inter alia, the character of the arguments encountered).

Refutational Advertising Messages. As noted earlier, the paucity of relevant studies permits no more than a suspicion that refutational advertising messages are generally more persuasive than their one-sided counterparts. But if refutational advertising messages are eventually shown to be genuinely more persuasive than one-sided messages, it will be worth considering that this effect might come about in various ways. For instance, the effect might be a consequence of the difference in argument content between refutational two-sided messages and one-sided messages (as, ex hypothesi, is the case for nonadvertising messages). Or the appearance of refutation might boost the advertisement's credibility, which in turn leads to enhanced attention to the actual content of the message, which—so long as the argumentative content is of the right sort—leads to enhanced persuasion. The general point is this: Even if refutational messages enjoy a persuasive advantage in both advertising and nonadvertising contexts, that advantage might arise through different processes in the two circumstances (pace William of Ockham). Given the different effects of nonrefutational forms in advertising and nonadvertising contexts, one ought not too easily assume that refutational forms will function identically in the two circumstances.

Nonadvertising Messages Reconsidered. The observed effects suggest that in nonadvertising contexts, persuaders would generally be well-advised to

employ refutational two-sided messages in preference to one-sided or nonrefutational two-sided messages. In such contexts, refutational messages enjoy both significantly greater credibility and significantly greater persuasiveness than do one-sided messages, and nonrefutational messages are dependably less persuasive than one-sided messages.

However, this general expectation might be tempered somewhat by a consideration of the effects observed in advertising contexts. As discussed above, the enhanced credibility of nonrefutational two-sided advertising messages (compared with one-sided messages) might reflect the audience's initial anticipation that advertisers will give only a one-sided picture. If so, then it may not be the advertising context per se that gives rise to the phenomenon of credibility enhancement through nonrefutational messages, but rather the background expectations of receivers. That is, whenever receivers have the relevant expectations, such credibility-enhancing effects might be expected. For example, in the domain of risk communication, in circumstances in which a communicator might be expected to discuss only risks or only benefits (e.g., of a given technology or physical/biological hazard), credibility might be enhanced by nonrefutational discussion of both (see Rowan, 1994, p. 405). The general point is that, even given the overall apparent advantage of refutational two-sided messages in nonadvertising contexts, such contexts might nevertheless contain circumstances in which nonrefutational two-sided messages could provide credibility enhancement.

Future Research

Future sidedness research might usefully be directed in four broad ways. First, additional primary research is needed concerning the effects of refutational two-sided advertising messages. The extant research hints that refutational advertising messages are both more credible and more persuasive than one-sided messages, but too few implementations have been studied to permit confident conclusions.

Second, conceptual attention to the particulars of sidedness variations seems warranted. For example, even in nonadvertising contexts, a refutational two-sided message is not guaranteed to be more persuasive than a one-sided message (e.g., Halverson, 1975). Thus a good deal would appear to turn on exactly how the various sidedness treatments are implemented. Surely, for instance, in a refutational two-sided message, it will matter just what counterarguments are refuted; a message refuting implausible minor objections might not have effects identical to those of a message refuting plausible and serious objections. Similarly, in nonrefutational two-sided messages, it might plausibly be supposed that effects could vary depending upon the nature of the opposing considerations that are acknowledged. Systematic conceptuali-

zation and study of such variations would plainly be useful (for efforts along such lines, see Crowley & Hoyer, 1994; Pechmann, 1990).

Third (and related to the preceding point), the possibility that the persuasive effects of sidedness variations will sometimes be a consequence of argumentative-content variations (as opposed to, say, the operation of heuristic principles) deserves careful attention. With a sharper conceptualization of argumentative-content variations, researchers might, for instance, examine the numbers and kinds of thoughts generated in different circumstances by different sidedness implementations (for work in this vein, see Hale et al., 1991).

Finally, exploration of the role of initial receiver skepticism seems warranted. Differences in initial mistrust might be responsible for the observed differences in the perceived credibility of nonrefutational messages in advertising and nonadvertising contexts (with nonrefutational two-sided messages perceived to be more credible than one-sided messages in advertising contexts but not in nonadvertising contexts). This possibility might be explored through systematic examination of the relationship between sidedness effects and receivers' background expectations about messages, both in advertising contexts and in nonadvertising circumstances potentially characterized by such mistrust.

NOTES

1. Jackson and Allen (1987) located only three estimates of the effect of sidedness on credibility, and hence did not analyze these closely.

2. The term *advertising* is used here to refer specifically to advertising for consumer products or services. This is potentially misleading, because in fact not all advertising is consumer advertising; for example, advertising can address sociopolitical issues (as when an individual or organization purchases advertising space to present a persuasive message on a public policy issue). But consumer product/service advertising is the most familiar form of advertising, hence the shorthand used here.

3. It would have been desirable to compare the present codings to those in previous reviews, but the only variable for which any previous reviews gave coding information was the nature of the two-sided message (refutational versus nonrefutational). For this variable, the present codings were compared with those of Jackson and Allen's (1987) review, Allen's (1991) review, and the discussion of Allen's (1991) review in O'Keefe (1993). Of the cases included in the present analysis, seven were coded differently here than in one or more previous reviews. Bettinghaus and Baseheart (1969), Etgar and Goodwin (1982), Hovland et al. (1949), Kanungo and Johar (1975), and Kaplowitz and Fisher (1985) were classified as refutational in Allen (1991, Table 2) but as nonrefutational in Jackson and Allen (1987), O'Keefe (1993), and the present review; Koballa (1984) was classified as refutational in Allen (1991) but as nonrefutational in O'Keefe (1993) and in the present review; and Lumsdaine and Janis (1953) was classified as refutational in Allen (1991), Jackson and Allen (1987), and O'Keefe (1993), but nonrefutational in the present review. I discuss all these differences, and rationales for the present codings, in O'Keefe (1993, pp. 88-90, 94n2).

4. Hale et al.'s (1991) model is putatively based on the elaboration likelihood model (but see their note 1, p. 388, for a disclaimer), though it invokes concepts such as "central persuasive cue" (p. 388) that are alien to the ELM (see Petty, Kasmer, Haugtvedt, & Cacioppo, 1987, p. 236).

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